

EXHIBIT C3

EXHIBIT A--CURRICULUM VITAE

ROGER T. BONNECAZE

T. Brockett Hudson Professor and Department Chair of Chemical Engineering
Department of Chemical Engineering, The University of Texas at Austin, Austin, Texas 78712-1062
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EDUCATION

Ph.D., Chemical Engineering, California Institute of Technology, 1991
M.S., Chemical Engineering, California Institute of Technology, 1987
B.S. (Honors), Chemical Engineering, Cornell University, 1985

RESEARCH INTERESTS

Rheology of Complex Fluids	Turbidity and Debris Flows
Computational Fluid Mechanics	Imprint and Immersion lithography
Electrical Impedance Tomography	Self-assembly of Nanoparticles at Surfaces

CURRENT AND PREVIOUS POSITIONS

Chair, Department of Chemical Engineering, The University of Texas at Austin
September 2005-present
Professor of Chemical Engineering, The University of Texas at Austin
September 2002-present
Visiting Professor, Laboratoire Matière Molle et Chimie, ESPCI, Paris, FRANCE
Spring 2003, Spring 2004
Associate Professor of Chemical Engineering, The University of Texas at Austin
September 1998-September 2002
Assistant Professor of Chemical Engineering, The University of Texas at Austin
January 1993-September 1998
Teaching and research related to modeling and simulation of the behavior of colloidal suspensions, emulsions, electrical impedance tomography, turbidity and debris flows, self-assembly of nanoparticles at surfaces and microfluidics.
Post-Doctoral Research Fellow, DAMTP, University of Cambridge
(April 1991-October 1992)
Research on particle-driven gravity currents and gravity currents in porous media.
Project Engineer/Manager, Hydro Research Science, Santa Clara, California
(July 1987 -October 1988)
Conducted physical and numerical model studies to develop solutions to problems of sediment-transport in hydraulic systems and pollutant-transport in aquifers and estuaries.

RECENT CONSULTING

PGS / Optical Products, Austin, Texas, 2004-present
LabTops, Taylor, Texas, 2003-present
Molecular Imprint, Inc., Austin, Texas, 2001-present
IDEXX, Portland, Maine, 2000-2002
Nanotechnologies Inc., Austin, Texas, 2000-2002
Advanced Coring Technologies, Austin, Texas, 1997-2002
Therasense, Alameda, California, 1997-2002

AWARDS

Caltech Vaughn Lecturer, 2005
Journal of Rheology Best Paper Prize, 2005
Joliot-Curie Visiting Professor, ESPCI, France, 2004
T. Brockett Hudson Professor of Chemical Engineering, 2002-present
Lockheed Martin Aeronautics Co. Award for Excellence in Engineering Teaching, 2001
Most Outstanding Faculty Member in Chemical Engineering, 1997
College of Engineering Faculty Leadership Award, 1996
Texas Ex-Students Teaching Award, 1996
Frank A. Liddell, Jr. Centennial Fellow in Chemical Engineering, 1995-2002
Award for Outstanding Engineering Teaching by an Assistant Professor, 1995
David & Lucile Packard Foundation Fellowship, 1994-1999
National Science Foundation Young Investigator Award, 1993-1998

EXHIBIT A--CURRICULUM VITAE

PROFESSIONAL AFFILIATIONS

American Institute of Chemical Engineers
American Physical Society
American Chemical Society
Society of Rheology
American Society of Engineering Education

UNIVERSITY COMMITTEE ASSIGNMENTS AND SERVICE

Departmental

Chemical Engineering Undergraduate Advisor, 2001-2002
Chair, ABET Program Outcomes 1 & 3 Evaluation and Recommendation Committee, 2004-present
Chair, Thermodynamics Qualifying Exam Committee, 2004
Member, Mentoring Future Faculty Committee, 2004-present
Director, Chemical Engineering Computational Research Network, 1995-present
Director, Chemical Engineering Undergraduate Computational Network, 1995-1999
Graduate Chemical Engineering Seminar Coordinator, 1999-2002
Chairman/Member, Kinetics Qualifying Exam Committee, 1996-02
Member, Committee to Set ABET Program Outcomes, 2002-2004
Member, ChE Curriculum Integration Committee, 2001-present
Member, Computing in Chemical Engineering Committee, 2001-present
Member, ChE Graduate Student Admissions Committee, 2001-present
Member, Chemical Engineering Faculty Recruiting Committee, 1993-1999
Member, Transport Qualifying Exam Committee, 1993-95
Member, Selection Committee for Departmental Staff Excellence Award, 1994-97
Member, ChE 448 (Computer Applications in ChE) ABET Curriculum Committee, 1995-96
Member, ChE 372 (Reactor Analysis & Design) ABET Curriculum Committee, 1995-96
Faculty Advisor, Omega Chi Epsilon, Chemical Engineering Honor Society, 1995-1999

College

Member, Negotiating the Ideal Faculty Position Workshop Committee, 2004
Member, Promotions and Tenure Committee, 2003-present
Chair, College of Engineering Teaching Awards Selection Committee, 2004
Member, College of Engineering Teaching Awards Selection Committee, 2003
Member, Advising, Admissions and Retention Committee, 2001-2002
Member, Study Abroad Committee, 2001-2002
Member, ChE Department Chair Review Committee, 2001
Member, Strategic Planning Committee, 1998-1999
Member, Mathematics and Science Committee, 1997-1998
Member, Equal Opportunity in Engineering Committee, 1993-1997
Minority Liaison Officer between ChE and College of Engineering, 1993-1997
Member, College Staff Excellence Award Selection Committee, 1994
Member, Multi-Media Teaching Faculty Task Force Committee, 1993-94
Member, College Computer Committee, 1994-1997
Member, College World Wide-Web Committee, 1994-95
Member, Computational and Applied Mathematics Graduate Studies Committee, 1993-present
Member, Ad-Hoc College of Engineering Mission-Vision Committee, 1996
Member, Instructional Media Lab Committee, 1995-1997
Member, Committee to Recommend Candidates for Chair of ChE, 1997
Member, Committee to Recommend Candidates for Chair of PGE, 1997
Faculty Mentor, Equal Opportunity in Engineering Program, 1994-1997

University

Member, University Undergraduate Awards Committee, 2005
Member, ICES Computational Materials Chair Search Committee, 2003-2004
Member, Center for Nano- and Molecular Science and Technology Executive Committee
Member (elected), Faculty Council, 1997-1999
Member, Recreational Sports Committee, 1998-1999
Member, Research Excellence Awards Review Committee, 1997-1998

EXHIBIT A--CURRICULUM VITAE

CONFERENCES ORGANIZED, SESSIONS CHAIRED AND OTHER NATIONAL SERVICE

- Vice Chair (Chair Elect 2007) APS DFD Nominating Committee, 2006-2007.
- Vice Chair (Chair Elect 2006-08) Fluid Mechanics Programming Committee for AIChE, 1999-2008
- Vice Meeting Program Chair for 2004 AIChE Annual Meeting in Austin, TX
- Co-chair for suspensions session of 21st International Conference of Theoretical and Applied Mechanics, Warsaw, (ICTAM 2004).
- Member, International Advisory Committee, 4th World Congress Industrial Process Tomography, Aizu, Japan, 2005
- Co-chair "Novel Fluid Mechanics", Fall AIChE meeting, Indianapolis, 2002.
- Organizing Committee, Fall Meeting of the APS Division of Fluid Dynamics, Dallas, 2002.
- Meeting Program Chair for Area 1j (Fluid Mechanics), Fall AIChE meeting, Indianapolis, 2002.
- Organizing Chair, IUTAM Symposium on Micromechanics of Fluid Suspensions and Solid Composites, April 3-5, 2002, Austin, TX.
- Chair "Complex and Bio-Fluid Mechanics" Fall Meeting of the AIChE in Reno, NV, 2001.
- Co-chair "Viscous Flows," Fall Meeting of the AIChE, Dallas, TX, 1999.
- Chair "Suspensions and Particulates," Fall Meeting of the Division of Fluid Mechanics of the APS, San Francisco, 1998.
- Chair "Interfacial Flows," Fall Meeting of the Division of Fluid Mechanics of the APS, Syracuse, NY, 1997.
- Co-chair (2 sessions) "Particulate and Multiphase Flows I & II," Fall Meeting of the AIChE, Los Angeles, 1997.
- Member, National Science Foundation Env. Geo-biochemistry Review Panel, April 1997.
- Member, National Science Foundation SBIR Review Panel, September 1998.
- Frequent reviewer (-12/yr) for NSF, DOE, ACS-PRF and other national science agencies in Britain, Canada and Israel.
- Frequent reviewer (-30/yr) for *Journal of Fluid Mechanics*, *Physics of Fluids*, *Langmuir*, *Proceedings of the Royal Society, Physical Review Letters* and other journals.

EXHIBIT A--CURRICULUM VITAE**PUBLICATIONS**

1. Bonnecaze, R.T. & Brady, J.F. 1990 A method for determining the effective conductivity of dispersion of particles, *Proc. Roy. Soc. A*, **430**, 285-313.
2. Bonnecaze, RT. & Brady, J.F. 1991 The effective conductivity of random suspensions of spherical particles, *Proc. Roy. Soc. A*, **432**, 445-465.
3. Bonnecaze, RT. & Brady, J.F. 1991 Rate of diffusion-limited reactions in dispersions of spherical traps via multipole scattering, *J Chem. Phys.* **94**, 537-540.
4. Bonnecaze, R. T. & Brady, J.F. 1992 Yield stresses in electrorheological fluids, *J Rheology*, **36**, 73-115.
5. Bonnecaze, RT. & Brady, J.F. 1992 Dynamic simulation of an electrorheological fluid, *J Chem. Phys.*, **96**, 2183-2202.
6. Sparks, R.S.J., Bonnecaze, R.T., Huppert, H. E., Lister, JR., Hallworth, M.A., Mader, H. & Phillips J. 1993 Sediment-laden gravity currents with reversing buoyancy, *Earth Plan. Sci. Letters*, **114**, 243-257.
7. Bonnecaze, R.T., Huppert, H.E., & Lister, J.R 1993 Particle-driven gravity currents, *J Fluid Mech.*, **250**, 339-369.
8. Bonnecaze, R.T., Hallworth, M. A., Huppert, H.E., & Lister, JR. 1995 Axisymmetric particle-driven gravity currents, *J Fluid Mech.*, **294**, 93-121.
9. Bonnecaze, RT. 1996 Interparticle forces and properties of suspensions, *Encyclopedia of Chemical Processing and Design*, **56**, 49-68, Marcel Dekker, Inc., New York.
10. Bonnecaze, R.T., Huppert, H.E., & Lister, J.R. 1996 Patterns of sedimentation from polydisperse turbidity currents, *Proc. Roy. Soc. A*, **452**, 2247-2261.
11. Tsiartas, P.C., Flanagan, L.W., Henderson, C.L., Hinsberg, W.D., Sanchez, I.C., Bonnecaze, RT. & Willson, C.G. 1997 The mechanism of phenolic polymer dissolution: A new perspective. *Macromolecules*, **30**, 4656-4664.
12. Schmidtke, D.W., Freeland, AC., Heller, A & Bonnecaze, R.T. 1998 Measurement and modeling of the transient difference between blood and subcutaneous glucose concentrations in the rat after injection of insulin. *Proc. Nat. Acad. Sci.*, **95**, 294-299.
13. Gray, Jeffrey J. & Bonnecaze, R.T. 1998 Rheology and dynamics of sheared arrays of colloidal particles. *J Rheology* **42**, 1121-1151.
14. Etuke, E.O. & Bonnecaze, RT. 1998 Measurement of angular velocities using electrical impedance tomography, *Flow Meas. & Instr.* **9**, 159-169.
15. Schleizer, A.D. & Bonnecaze, R.T. 1999 Displacement of a two-dimensional immiscible fluid droplet adhering to a capillary wall in shear and pressure-driven flows. *J Fluid Mech.*, **383**, 29-54.
16. Bonnecaze, R.T. & Lister, JR. 1999 Particle-driven gravity currents down planar slopes, *J. Fluid Mech.*, **390**, 75-91.
17. Lukner, R.B. & Bonnecaze, R.T. 1999 Piston-driven flow of highly concentrated suspensions, *J. Rheology*, **43**, 735-751.
18. Butler, J.E. & Bonnecaze, R.T. 1999 Imaging of particle shear migration with electrical impedance tomography, *Physics of Fluids* **11**(8), 1982-1994.
19. Butler, J.E., Majors, P.D. & Bonnecaze, R.T. 1999 Observations of shear-induced particle migration for oscillatory flow of a suspension within a tube, *Physics of Fluids* **11**(10), 2865-2877.
20. Etuke, E.O., Butler, J.E. & Bonnecaze, RT. 1999 Adapting electrical impedance tomography for imaging forming jets in paper production, *Proceedings (refereed) TAPPI 1999 Engineering/Process & Product Quality Conference*.
21. Freeland, AC. & Bonnecaze, RT. 1999 Inference of Blood Glucose Concentrations from Subcutaneous Glucose Concentrations: Application to Glucose Biosensors. *Annals of Biomedical Eng.*, **27**, 525-537.
22. Butler, J.E. & Bonnecaze, R.T. 1999 Inverse method for imaging a free surface using electrical impedance tomography, *Chem. Eng. Sci.* **55**(7), 1193-1204.
23. Gray, J.J., Chiang, R & Bonnecaze, R.T. 1999 Colloidal particles: Origin of anomalous multibody interactions, *Nature* **402**, 750 Brief Communication.
24. Martula, D.S., Hasegawa, T., Lloyd, D.R, & Bonnecaze, R.T. 2000 Coalescence-induced coalescence of inviscid droplets in a viscous fluid, *J Coll. Interface Sci.* **232**, 241-253.
25. Gray, J.J., Klein, D.H., Bonnecaze, RT. & Korgel, RA 2000 Dynamic non-equilibrium phase behavior during the random sequential adsorption of tethered hard disks, *Phys. Rev Lett.* **85**, 44304433.
26. Engblom, W.A., Lake, L.W. & Bonnecaze, R.T. 2001 A front-capture scheme for the simulation of homogeneous and particle-driven gravity currents, *Int. J. Num. Meth. Fluids.* **35**, 961-982.
27. Gray, J.J. & Bonnecaze, R.T. 2001 Adsorption of colloidal particles by Brownian dynamics simulation: kinetics and surface structures, *J. Chem. Phys.*, **114**, 1366-1381.
28. Gray, J.I., Klein, D.H., Korgel, B.A. & Bonnecaze, R.T. 2001 Microstructure formation and kinetics in the random sequential adsorption of polydisperse tethered nanoparticles, *Langmuir* **17**, 23172328.
29. Gray, J.J. & Bonnecaze, R.T. 2001 Adsorption of bidispersed colloidal particles by Brownian dynamics simulation: kinetics and surface structures, *Langmuir*, **17**(25); 7935-7947.

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30. Doty, R.C., Bonnecaze, R.T. & Korgel, B.A. 2002 Kinetic bottleneck to the self-organization of bidisperse hard disk monolayers formed by random sequential adsorption, *Phys. Rev E* **65**, 061503.
31. Martula, D.S., Lloyd, D.R., & Bonnecaze, R.T. 2003 The effects of viscosity on coalescence-induced coalescence, *Int. J. Multiphase Flow* **29**(8), 1265-1282.
32. Srivatsan, L., Lake, L.W. & Bonnecaze, R.T. 2004 Scaling analysis of deposition from turbidity currents, *Geo-Marine Letters* **24**, 63-74.
33. Meeker, S., Bonnecaze, R.T. & Cloitre, M. 2004 Slip and flow in soft particles pastes, *Phys. Rev. Lett.* **92**, 198302.
34. Colburn, M., Choi, B.J., Sreenivasan, S.V., Bonnecaze, R.T. & Willson, C.G. 2004 Ramifications of lubrication theory on imprint lithography, *Microelectronics Engineering*, **75**, 321-329.
35. Rabideau, B.D. & Bonnecaze, R.T. 2004 A computational study of the self-organization of bidisperse nanoparticles, *Langmuir* **20**, 9408-9414.
36. Meeker, S., Bonnecaze, R.T. & Cloitre, M. 2004 Slip and flow in pastes of soft particles: Direct observation and rheology, *J. Rheology* **48**, 1295-1320.
37. Norman, J.T., Nayak, H.V. & Bonnecaze, R.T. 2005 Migration of buoyant particles in low Reynolds number pressure-driven flows, *J. Fluid Mech.* **523**, 1-35.
38. Norman, J.T. & Bonnecaze, R.T. 2005 Quantitative measurement of solids distribution in suspension flows using electrical resistance tomography, *Can. J. Chem. Eng.* **83**, 24-36
39. Woods, H.A., Bonnecaze, R.T., & Zrubek, B. 2005 Oxygen and water flux across eggs of *Manduca Sexta*, *J. Exp. Biol.* **208**, 1297-1308.
40. Ryoo, W., Dickson, J.L., Dhanuka, V.V., Webber, S.E., Bonnecaze, R.T. & Johnston, K.P. 2005 Electrostatic stabilization of colloids in carbon dioxide: electrophoresis and dielectrophoresis, *Langmuir* **21** 5914-5923.
41. Reddy, S. & Bonnecaze, R.T. 2005 Simulation of fluid flow in the Step and Flash Imprint Lithography process, *Microelectronics Engineering* **82**, 60-70.
42. Reddy, S., Schunk, P.R. & Bonnecaze, R.T. 2005 Dynamics of low capillary number interfaces through sharp features, *Phys. Fluids* **17**, 122104.
43. Rabideau, B.D. & Bonnecaze, R.T. 2005 Computational predictions of stable 2D arrays of bidisperse particles, *Langmuir* **21**(23), 10856-10861.
44. Ryoo, W., Webber, S.E., Bonnecaze, R.T. and Johnston, K.P. 2006 Long-ranged electrostatic repulsion and crystallization of emulsion droplets in an ultralow dielectric medium supercritical carbon dioxide, *Langmuir* **22**(3), 1006-1015.
45. Dickey, M.D., Collister, E., Raines, A., Tsiartis, P., Holcombe, T., Sreenivasan, S.V., Bonnecaze, R.T. & Willson, C.G. 2006 Photocurable pillar arrays formed via electrohydrodynamic instabilities, *Chem. Matls.* (in press)
46. Seth, R., Cloitre, M. & Bonnecaze, R.T. 2006 Elastic Properties of Soft Pastes: Effect of Microstructure, *J. Rheology* (in press)
47. Mano, N., Nam, B., Heller, A. & Bonnecaze, R.T. 2006 A theory for the porous rotating disc electrode, *JACS* (submitted)
48. Norman, J.T., Oguntade, B.O. & Bonnecaze, R.T. 2006 Particle distribution in pressure-driven flows of bimodal, buoyant suspensions, *J. Fluid Mech.* (submitted)
49. Gadde, P.B., Liu, Y., Norman, J.T., Bonnecaze, R.T. & Sharma, M.M. 2006 Modeling Proppant Settling in Water-Fracs, *SPE Formation Evaluation* (submitted)
50. Woods, H.A. & Bonnecaze, R.T. 2006 Insect eggs at a transition between diffusion and reaction limitation: temperature, oxygen, and water, *J. Theor. Biol.* (submitted)

PATENTS

1. Apparatus for photocatalytic fluid purification, Patent No. **6,063,343**, Date of Patent, May 16, 2000, with James Say, Adam Heller, Steven Sitkiewitz, Ephraim Heller, Paul Haugsjaa.
2. Apparatus for photocatalytic fluid purification, Patent No. **5,790,934**, Date of Patent, Aug 4, 1998, with James Say, Adam Heller, Steven Sitkiewitz, Ephraim Heller, Paul Haugsjaa.
3. Downhole in-situ measurement of physical and / or chemical properties including fluid saturations of cores while coring, Patent No. **5,984,023**, Date of Patent, Nov 16, 1999, with Mukul Sharma & Bernard Zemel.
4. Downhole in-situ measurement of physical and / or chemical properties including fluid saturations of cores while coring, Patent No. **6,003,620**, Date of Patent, Dec 21, 1999, with Mukul Sharma & Bernard Zemel.
5. Downhole in-situ measurement of physical and / or chemical properties including fluid saturations of cores while coring, Patent No. **6,220,620**, Date of Patent, April 24, 2001, with Mukul Sharma & Bernard Zemel.
6. Blood analyte monitoring through subcutaneous measurement, Patent No. **6,579,690**, Date of Patent, June 17, 2003, with Angela Freeland.
7. Method for imprint lithography using an electric field, Patent No. **6,908,861**, Date of Patent, June 21, 2005, with C. Grant Willson and S.V. Sreenivasan.
8. Method for fabricating nanoscale patterns in light curable compositions using an electric field, Patent No. **6,964,793**, Date of Patent, November 15, 2005, with C. Grant Willson and S.V. Sreenivasan.

EXHIBIT A--CURRICULUM VITAE

JOURNAL GUEST EDITOR

1. *Micromechanics of Fluid Suspensions and Solid Composites* May 2003, Special Theme Issue for *Philosophical Transactions* of the Royal Society of London. Series A, Mathematical and Physical Sciences.

PRESENTATIONS SINCE BEGINNING AT UT-AUSTIN

1. "Electrical Impedance Tomography," 3M Corporation, Austin, TX, December 1993. **(Invited Seminar)**
2. "Dynamic Simulation of Electrorheological Fluids," DuPont Research, Wilmington, DE, March 1994. **(Invited Seminar)**
3. "Containment of Subsurface Hazardous Wastes via Hydrofracturing with Dense Suspensions," Fall AIChE Meeting, San Francisco, CA, November 1994.
4. "An Introduction to Electrical Impedance Tomography," Kodak Corporation, Rochester, NY, May 1995. **(Invited Seminar)**
5. "Electrical Impedance Tomography," Annual Meeting of Packard Fellows, Monterey, CA, September 1995.
6. "Displacement of an Immiscible Fluid Slug in a Capillary Tube," Fall AIChE Meeting, Chicago, IL, November 1996.
7. "Electrical Impedance Tomography and the Flow of Dense Suspensions," University of Minnesota Graduate Seminar, November 5, 1996. **(Invited Seminar)**
8. "Particle-Driven Gravity Currents Down Planar Slopes," Fall APS Meeting of Division of Fluid Mechanics, Syracuse, NY, November 1996. **(Invited Seminar)**
9. "Characterization of Reservoirs from Geophysical Models of their Formation," Mobil Research, Dallas, TX, January 23, 1997. **(Invited Seminar)**
10. "Electrical Impedance Tomography of Multiphase Flows," Cornell University Graduate Seminar, February 17, 1997. **(Invited Seminar)**
11. "Electrical Impedance Tomography of Multiphase Flows," Kodak Corporation, Rochester, NY, September 1997. **(Invited Seminar)**
12. "Immiscible Fluid Displacement with Moving Contact Lines," Advanced Thermal/Fluids Seminar, Dept. of Mechanical Engineering, The University of Texas at Austin, October 1997. **(Invited Seminar)**
13. "Tomographic Imaging of Pressure-Driven Flow of Suspensions" University of Pennsylvania, Philadelphia, PA, October 1998. **(Invited Seminar)**
14. "Modeling of Coalescence-Induced Coalescence," Fall AIChE Meeting, Miami, FL, November 1998.
15. "The Dynamics, Deposition and Scaling Analysis of Turbidity Currents" NMSU, Las Cruces, NM, January 1999. **(Invited Seminar)**
16. "Tomographic Imaging of Pressure-Driven Flow of Suspensions" UC Santa Barbara, Santa Barbara, CA, February 1999. **(Invited Seminar)**
17. "Tomographic Imaging of Pressure-Driven Flow of Suspensions" UCLA, Los Angles, CA, February 1999. **(Invited Seminar)**
18. "Coalescence-Induced Coalescence" Levich Institute, CUNY, New York, April 1999. **(Invited Seminar)**
19. "Coalescence-Induced Coalescence" Princeton University, Princeton, NJ, April 1999. **(Invited Seminar)**
20. "Coalescence-Induced Coalescence" Annual Society of Engineering Science Meeting, Austin, TX, October 1999.
21. "Modeling of Coalescence-Induced Coalescence" University of Pennsylvania, Philadelphia, PA, February, 2000. **(Invited Seminar)**
22. "Modeling of Coalescence-Induced Coalescence" Texas A&M, College Station, February, 2000. **(Invited Seminar)**
23. "Modeling of Coalescence-Induced Coalescence" University of Colorado, Boulder, CO, March, 2000. **(Invited Seminar)**
24. "Analysis of Reaction and Flow in Stochastically Heterogeneous Porous Media" GEOSCIENCE :2000, British Geological Society, Manchester, England, April 2000. **(Invited Talk)**
25. "The Dynamics, Deposition and Scaling Analysis of Turbidity Currents" UT-Austin, Department of Petroleum and Geosystems Engineering, Austin, TX, April 2000. **(Invited Seminar)**
26. "Micromechanics of Pastes" Fall AIChE Meeting, Los Angeles, CA November 2000
27. "Microstructure Formation by Adsorption of Colloidal and Nanoscale Particles" Rice University, Houston, TX, March 2001. **(Invited Seminar)**
28. "Adsorption of Tethered Nanoparticles" International Conference on Computational Nanoscience, Hilton Head, SC, March 2001.
29. "Modeling Coalescence-Induced Coalescence" University of Wisconsin, Madison, Wisconsin, April 2001. **(Invited Seminar)**
30. "Microstructure Formation by Adsorption of Colloidal and Nanoscale Particles" Stanford University, Stanford, CA, May 2001. **(Invited Seminar)**

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31. "Microstructure Formation by Adsorption of Colloidal and Nanoscale Particles" The University of Texas at Austin, Condensed Matter Physics Colloquium, Austin, TX, October 2001. (**Invited Seminar**)
32. "Rheology of Complex Fluids in Microvasculature for Mechanical Systems", March 2002, DARPA Workshop, Microvasculature for Mechanical Systems. (**Invited Seminar**).
33. "Modeling Coalescence-Induced Coalescence" University of Texas at Austin, April 2002, Non-Linear Dynamics Colloquium (**Invited Seminar**)
34. "Modeling Coalescence-Induced Coalescence" Ecole Supérieure de Physique et de Chimie Industrielles (ESPCI), Laboratoire Matière Molle et Chimie, July 2002. (**Invited Seminar**)
35. "Formation and Characterization of Turbidites: Mathematical Models, Scaling Analysis and Simulation" 52nd Annual Convention of Gulf Coast Association of Geological Societies and Gulf Coast Section SEPM, Austin, Texas, November 2002. (**Invited Seminar**)
36. "Microstructure Formation by Adsorption of Colloidal and Nanoscale Particles" University of Houston November 2002. (**Invited Seminar**)
37. "Microstructure Formation by Adsorption of Colloidal and Nanoscale Particles". December 2002, *The 11th Nisshin Engineering Particle Technology International Seminar (NEPTIS-11), Kyoto, Japan* (**Invited Seminar**)
38. "Microstructure Formation by Adsorption of Colloidal and Nanoscale Particles" Sandia National Laboratories, February 2003. (**Invited Seminar**)
39. "Slip and Rheology of Soft Particle Pastes" Fall AIChE Annual Meeting, San Francisco, CA November 2003.
40. "Migration of Buoyant Particles in Low-Reynolds Number Pressure-Driven Flow" Fall AIChE Annual Meeting, San Francisco, CA, November 2003.
41. "Slip and Rheology of Soft Particle Pastes" Fall APS DFD Meeting, Secaucus, NJ, November 2003.
42. "The Rheology of Soft Particle Pastes," Seminar Series, Department of Chemical Engineering, RPI April 2004. (**Invited Seminar**)
43. "Self-assembly of 2-D arrays of bidisperse particles", Particles 2004, Orlando, Fl, March 2004 (**Invited Seminar**)
44. "Migration of Buoyant Mono- & Bi-Disperse Suspensions in Low Reynolds Pressure-Driven Flow", 2004 ICTAM Meeting, Warsaw, Poland, August, 2004
45. "Microstructure Formation of Coating of 2D Arrays of Bidisperse Nanoparticles" 12th International Coating Science and Technology Symposium, Rochester, NY, September 2004 (**Invited Seminar**).
46. "Slip and Flow of Soft Particle Pastes", Seminar Series, Department of Chemical Engineering, University of Florida October 2004 (**Invited Seminar**)
47. "Slip and Flow of Soft Particle Pastes", Seminar Series, Department of Chemical Engineering, Washington University, March 2005 (**Invited Seminar**)
48. "Elastic Properties of Soft Particle Pastes", Annual European Rheology Conference, Grenoble, France, April 2005.
49. "Slip, Flow and Aging of Soft Particle Pastes", Vaughn Lecture, Department of Chemical Engineering, California Institute of Technology, April 2005. (**Invited Seminar**)
50. "Flow and Reaction in a Porous Rotating Disk Electrodes", Fall AIChE Annual Meeting, Cincinnati, OH November 2005.
51. "Slip, Flow and Aging of Soft Particle Pastes", Department of Chemical Engineering, University of Delaware, December 2005. (**Invited Seminar**)
52. "Slip, Flow and Aging of Soft Particle Pastes", Department of Chemical Engineering, University of Michigan, December 2005. (**Invited Seminar**)
53. "Slip, Flow and Aging of Soft Particle Pastes", Department of Chemical Engineering, The University of Oklahoma, February 2006. (**Invited Seminar**)
54. "Particle Migration in Pressure-Driven Suspension Flows", Guidant Inc., Santa Clara, CA, February 2006 (**Invited Seminar**)

PRESENTATIONS BY UT-AUSTIN RESEARCH STUDENTS UNDER MY SUPERVISION

1. "Piston-Driven Flow of Dense Suspensions," 1995 Annual Meeting of the Society of Rheology Sacramento, CA, 1995 - R. B. Lukner & R.T. Bonnecaze.
2. "Simulation of Immiscible Fluid Displacement with Contact Lines via the Boundary Integral Method," 1995 APS Meeting of the Division of Fluid Dynamics, Irvine, CA, 1995 - A.D. Schleizer Bonnecaze.
3. "Displacement of a Two-Dimensional Droplet Adsorbed to a Wall in Shear and Pressure-Driven Flows" Fall AIChE Meeting, Chicago, IL, 1996 - AD. Schleizer & R. T. Bonnecaze.
4. "The Dynamics of Immiscible Fluid Displacement in Wavy Tubes," Fall APS Meeting of Division Fluid Mechanics, Syracuse, NY, November 1996 - AD. Schleizer & R. T. Bonnecaze.
5. "Angular Velocity Profiling by Means of Electrical Impedance Tomography," Frontiers of Process Tomography II, Delft, The Netherlands, April 1997 - E. Etuke, J. E. Butler & R. T. Bonnecaze.

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6. "Imaging of Particle Shear Migration with Electrical Impedance Tomography," Fall AIChE Meeting, Los Angeles, CA, November 1997 - J.E. Butler & R. T. Bonnecaze.
7. "Imaging of Particle Shear Migration with Electrical Impedance Tomography," Fall ASME Meeting, Dallas, TX, November 1997 - J.E. Butler & R. T. Bonnecaze.
8. "Rheology and Dynamics of Sheared Arrays of Colloidal Particles," Annual Society of Rheology Meeting, Monterey CA, 1998 - J. G. Grav & R. T. Bonnecaze.
9. "Classical Regularization for the Inference of Blood Glucose Concentrations from Subcutaneous Glucose Concentrations: Application to Glucose Biosensors," Fall AIChE Meeting, Miami, FL, November 1998 - A.C. Freeland & R. T. Bonnecaze. (Poster)
10. "Structure Formation in the Adsorption of Colloidal Mixtures," Annual ACS Colloids Meeting, Cambridge, MA, June 1999 - J.J. Gray & R. T. Bonnecaze.
11. "Do Like-Charged Colloidal Particles Attract?," Fall AIChE Meeting, Dallas, TX, November 1999 J.J. Gray, B.H. Chiang, H.B. Eitouni & R. T. Bonnecaze.
12. "Structure Formation in the Adsorption of Colloidal Mixtures," Fall AIChE Meeting, Dallas, TX, November 1999 - J.J. Gray & R. T. Bonnecaze.
13. "A Biological Inverse Problem: Monitoring Blood Glucose with Biosensors," Fall AIChE Meeting, Dallas, TX, November 1999 - A.C. Freeland & R. T. Bonnecaze.
14. "Observations of Shear-Induced Particle Migration for Oscillatory Flow of a Suspension within a Tube" Fall AIChE Meeting, Dallas, TX, November 1999 - J.E. Butler, P.D. Majors & R. T. Bonnecaze.
15. "Coalescence-Induced Coalescence in Polymeric Membrane Formation," Fall AIChE Meeting, Dallas, TX, November 1999 - D.S. Martula, T. Hasegawa, D.R. Lloyd & R. T. Bonnecaze.
16. "Adsorption of Tethered Nanoparticles" Fall AIChE Meeting, Los Angeles, CA November 2000 - J.J. Gray, D. H. Klein, B.A. Korgel & R. T. Bonnecaze.
17. "Adsorption of Tethered Nanoparticles" Spring APS Meeting, Seattle, WA, March 2001 - J.J. Grav, D. H. Klein, B.A. Korgel & R. T. Bonnecaze.
18. "Kinetic bottleneck to the self-organization of bidisperse hard disk monolayers formed by random sequential adsorption" Fall AIChE Meeting, Indianapolis, IN, November 2002. - R.C. Doty, Bonnecaze, RT. & Korgel, B.A.
19. "Flow and Deposition of Concentrated Particle-Driven Gravity Currents," Fall APS-DFD, Dallas, TX, November 2002 - L. Srivatsan & R. T. Bonnecaze.
20. "Non-invasive Imaging of Particle Migration in Low-Reynolds number Pressure-Driven Flows," Fall APS-DFD, Dallas, TX, November 2002 - J.T. Norman & R. T. Bonnecaze.
21. "Non-invasive Imaging of Particle Migration in Low-Reynolds number Pressure-Driven Flows using Electrical Impedance Tomography," 3rd World Process Tomography Conference, Banff, CA September 2003 - J.T. Norman & R. T. Bonnecaze.
22. "A Numerical Study of Low Capillary Number Filling of Lithographic Features," Fall AIChE Meeting, Austin, TX, November 2004 - S. Reddy, P.R. Schunk & R.T. Bonnecaze.
23. "Multi-Drop Filling Behavior in Step-and-Flash Imprint Lithography," Fall AIChE Meeting, Austin, TX, November 2004 - S. Reddy & R.T. Bonnecaze.
24. "Simulation of the Self-Assembly of 2-D Arrays of Bidisperse Particles," Fall AIChE Meeting, Austin, TX, November 2004 - B.D. Rabideau & R.T. Bonnecaze.
25. "The Effect of Interparticle Forces on the Wall Slip of Soft Particle Pastes," Fall AIChE Meeting, Austin, TX, November 2004 - J. Seth & R.T. Bonnecaze.
26. "Multi-Drop Filling Behavior in Step-and-Flash Imprint Lithography," 3rd International Conference on Nanoimprint and Nanoprint Technology, Vienna, Austria, December 2004 - S. Reddy & R.T. Bonnecaze.
27. "The Elastic and Plastic Properties of Disordered Soft Particle Pastes," 76th Annual Meeting of the Society of Rheology, February 2005 - J. Seth & R.T. Bonnecaze.
28. "Multi-Drop Filling Behavior in Step-and-Flash Imprint Lithography," Microlithography 2005, San Jose, CA, March 2005 - S. Reddy & R.T. Bonnecaze.
29. "Flow and Reaction in Porous Rotating Disk Electrodes," APS DFD Meeting, Chicago, IL, November 2005 - B. Nam & R.T. Bonnecaze.
30. "Elastohydrodynamics of Step and Flash Imprint Lithography," APS DFD Meeting, Chicago, IL, November 2005 - S. Reddy & R.T. Bonnecaze.

EXHIBIT A--CURRICULUM VITAE

GRANTS AND CONTRACTS (*RTB is Principal Investigator (PI) unless otherwise noted*)

1. National Science Foundation-Young Investigator Award, "Transport Phenomena of Particulate Systems," \$312,500, 5/31/93-6/1/98.
2. Kodak Corporation, "Development of Electrical Impedance Tomography," \$40,000, 1/1/94-12/31/97.
3. Exxon Education Foundation, "Fluid Mechanics and Transport Phenomena of Suspended Materials," \$20,000, 11/1/97-7/31/00
4. Packard Foundation, "Fundamental Studies of Suspension Flows," \$525,000, 9/1/94-8/31/01
5. Mobil Strategic Research Center, "Characterization of Reservoirs Based on Geophysical Models of their Formation," \$247,197, 8/1/96-7/30/00.
6. TAPPI Foundation, "Imaging of Headbox Outflow Using Electrical Impedance Tomography," \$39,689, 1/1/97-12/31/97
7. Advanced Coring Technologies, "Fluid Saturation Measurements of Cores using Electrical Impedance Tomography," \$10,000, 11/1/98-11/1/99
8. Department of Commerce Advanced Technology Program and Baxter Medical, TIPS Ultrafiltration Membranes for Biological Separations," \$843,247, 1/1/99-12/31/01, (w/ Professor D.R. Lloyd, PI)
9. UT Austin, Research Internship, \$16,000, 9/1/2000-5/31/2001.
10. DARPA, "Step & Flash Imprint Lithography: A Low Cost, Ultra-High resolution Semiconductor Fabrication Technology," \$4,000,012, 9/1/2001-8/31/2004. (w/ Professors C. G. Willson (PI), S.V. Sreenivasan, & J.G. Ekerdt)
11. Department of Energy, "Characterization of Turbiditic Reservoirs Based on Geophysical Models of their Formation," \$649,344, 9/30/01-8/31/05, (w/ Professor L. W. Lake).
12. Texas Higher Education Coordinating Board-ATP "Tools for the Design and Control of Hollow Fiber Spinning Systems," \$171,080, 1/1/02-8/31/04.
13. National Science Foundation, "ITR-Large-Scale Simulation of Emulsions," \$400,000, 9/1/02-1/15/06 (w/ G. Rodin (PI) and C. Bajaj).
14. Sandia National Laboratories, "Meso-Scale Structure Formation on Surfaces in Film Coating," \$100,000, 10/1/02-9/30/05.
15. ACS-PRF, "Rheology and Aging of Soft Particle Pastes," \$120,000, 6/1/04-5/31/07.
16. SEMATECH-AMRC, "Immersion and Field Assisted Lithography," \$600,000, 9/1/04-8/31/07
17. Sandia National Laboratories, "Dynamics of Particulate Film Formation on Surfaces during Coating," \$49,930, 10/1/04-9/30/05.
18. ARAMCO, "Reservoir Formation Modeling," \$150,000, 1/1/05-12/31/06 (w/ Professor L.W. Lake).
19. Molecular Imprints, "Simulation of Fluid Flow in Step and Flash Imprint Lithography", \$100,000, 1/1/06-12/31/06.
20. Department of Defense (AFOSR-MURI), "Engineering Biofuel Cells", \$3,999,990, 1/1/06-12/31/09 (w/ Adam Heller (PI) and George Georgiou), pending.
21. Department of Education (GAANN), "UT Austin National Needs program in Chemical Engineering", \$270,576, 9/1/06-8/31/09 (w/ Nicholas Peppas-PI), pending.

EXHIBIT A--CURRICULUM VITAE**TEACHING ACTIVITIES SINCE FALL 1994**

<u>Term</u>	<u>Course</u>	<u>Course Title</u>	<u>Enrollment</u>	<u>No. of Resp. to Course Instructor Survey</u>	<u>Overall Course Rating</u>	<u>Overall Instructor Rating</u>
S '95	CHE 353	Transport Phenomena	46	39	4.18	4.25
F '95	CHE 381N	Graduate Fluid Flow and Heat Transfer	22	20	4.15	4.30
S '96	CHE 372	Chern Reactor Analysis and Design	60	37	3.92	4.30
F '96	CHE 381N	Graduate Fluid Flow and Heat Transfer	8	8	4.30	4.80
S '97	CHE 372	Chem. Reactor Analysis and Design	51	44	4.50	4.80
F '97	CHE 372	Chem. Reactor Analysis and Design	79	48	4.5	4.6
S '98	CHE 448	Computer Application in Chemical Engineering	84	70	3.9	3.9
F '98	CHE 385M	Graduate Surface Phenomena	14	14	4.5	4.0
S '99	CHE 381N	Graduate Fluid Flow and Heat Transfer	14	14	4.5	4.4
S '00	CHE 353	Transport Phenomena	37	31	4.2	4.4
S '00	CHE 385M	Graduate Surface Phenomena	28	25	4.2	4.3
F '00	CHE 381N	Graduate Fluid Flow and Heat Transfer	12	12	4.7	4.7
S '01	CHE 353	Transport Phenomena	18	16	4.3	4.3
Su '01	CHE 372	Chem. Reactor Analysis and Design	15	13	4.1	4.5
F '01	CHE 385M	Graduate Surface Phenomena	40	32	4.0	4.4
Sp '02	CHE 381N	Graduate Fluid Flow and Heat Transfer	12	12	4.8	4.5
Fa '02	ChE 385M	Graduate Surface Phenomena	8	7	4.4	4.3
Fa '03	ChE 322	Thermodynamics	37	32	3.8	4.4
Sp '04	ChE 385M	Graduate Surface Phenomena	38	32	4.3	4.8
Fa '04	ChE 322	Thermodynamics	38	26	3.8	4.4
Sp '05	ChE 385m	Graduate Surface Phenomena	19	18	4.1	4.7
Fa '05	ChE 322	Thermodynamics	45	35	3.9	4.3

NOTE: 5.0 = excellent and 1.0 = poor. na = not available.

Teaching Awards

Student Engineering Council Teaching Excellence Award, 2005

Lockheed Martin Aeronautics Co. Award for Excellence in Engineering Teaching, 2001

Most Outstanding Faculty Member in Chemical Engineering, UT, 1997 (Selected by students)

Texas Ex-Students Teaching Award, UT, 1996 (Selected by students)

Award for Outstanding Engineering Teaching by an Assistant Professor, UT, 1995 (Selected by students and faculty)

EXHIBIT A--CURRICULUM VITAE

PH.D SUPERVISIONS COMPLETED

Anthony D. Schleizer, 1997 (Research Engineer at Exxon-Mobil, Houston, TX)
Jason. E. Butler, 1998 (Assistant Professor, University of Florida Chemical Engineering Department)
Ralf B. Lukner, 1999 (Co-Founder & President of Momentum Technologies, Inc., Austin, TX)
Jeffrey J. Gray, 2000 (Assistant Professor Johns Hopkins Chemical Engineering Department)
(*Dr. Gray's thesis received Honorable Mention at the 2001 Doctoral Convocation at UT*)
Angela C. Freeland, 2000 (Research Engineer at FMC Lithium, Charlotte, NC)
D. Stefan Martula, 2000 (Research Engineer at Shell Development, Houston, TX)
Carolyn Schmit, 2001 (Research Engineer at BP-Amoco, Naperville, IN)
Jay T. Norman, 2004 (Research Engineering, Intel, Portland, OR)
Srivatsan Lakshminarasimhan, 2004 (Post-doc, Petroleum & Geosystems Engineering, UT Austin)

M.S. SUPERVISIONS COMPLETED

Anna Saville-Johnson, 2001 (Process Engineer at Bayer, Houston, TX)
Amy Nelson, 2001 (Process Engineer at W.R. Grace, Boston, MA)
David Mellenthin, 2001 (Sr. Process Engineer, DuPont PhotoMask, Round Rock, TX)

POST-DOCTORAL STUDENT SUPERVISIONS COMPLETED

William Engblom (8/96-6/97; Research Engineer at Aerospace Corp, El Segundo, CA)
Emmanuel Etuke (3/96-4/98; Research Engineer at AT&T, Holmdel, NJ)
Hebri Nayak (5/02-2/05; Research Engineering at GE Jet Engines, Cincinnati, OH)

PH. D. SUPERVISIONS IN PROGRESS

Shravanthi Reddy	Jyoti Seth
Brooks Rabideau	Derek Bassett
Bomi Nam	Babatunde Ogunnade

PAST & PRESENT UNDERGRADUATE RESEARCH SUPERVISIONS

Amrish Dalal	Anna Muselli	Harley Klein
Thomas Zhang	Priyanka Bandyopadahay	Hany Eitouni
Gwo-Kwei Lee	Benny Chiang	Terry Farmer
Jeffrey Greeley	Jason Compton	Sahban Ozair
Rene Rodreguez	Owen Hehmeyer	Jim English

UNDERGRADUATE ADVISING

40-50 students per semester
Undergraduate Advisor, Chemical Engineering, 2001-2002

PH. D. COMMITTEE SERVICE

Approximately 75 over the past 12 years in the Departments of Chemical Engineering, Petroleum & Geosystems Engineering, Mechanical Engineering, Aerospace & Engineering Mechanics, and Physics and Materials Science Graduate Program.

FULL OR PARTIAL LEAVES

Spring 2003, Sabbatical at the Laboratoire Matière Molle et Chimie, Ecole Supérieure de Physique et de Chimie Industrielles (ESPCI), Paris, France.

EXHIBIT B

1. Plaintiff's Preliminary Claim Constructions Pursuant to Local Patent Rule 42
2. Defendant M-I, LLC's List of Disputed Claim Terms
3. The Local and Patent Rules for United States District Court for the Eastern District of Texas
4. Halliburton's May 3, 2005, Complaint
5. United States Patent No. 6,887,832
6. M-I, LLC's Answer, Affirmative Defenses, and Counterclaims
7. Halliburton Energy Services, Inc.'s Answer to M-I, LLC's Counterclaims
8. Plaintiff's Preliminary Infringement Contentions